

# **Biosafety Awareness**



## **What is Biosafety?**

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Biosafety is safety measures taken with respect to the effects of biological research on humans, animals, plants and the environment.

## **Biohazards**

A biohazard is a biological agent or condition that constitutes a hazard to humans, animal, plants or the environment.

At Western, we have many types of biohazards. Researchers use many different types of biohazards in their laboratories including fungi, bacteria and viruses. Other examples of biohazards include plant, animal or human cells and blood.

## **Who oversees Biosafety at Western?**

There are several committees at Western that oversee biosafety issues – including the University Biosafety Committee and its Biohazard, Subcommittee, as well as the University Health and Safety Committee. The University also has a Biosafety Officer in Occupational Health and Safety. Supervisors oversee the day-to-day operations of the lab.

## **What about Government Standards?**

There are also government agencies that oversee biosafety at Western, including the Public Health Agency of Canada (PHAC) and the Canadian Food Inspection Agency (CFIA). PHAC publishes the Canadian Biosafety Standard which replaced the laboratory Biosafety and Guidelines and the CFIA's Containment Standards for Veterinary Facilities.

The transportation of biohazards is regulated by the Transport Canada and the International Air Transport Association.

## Laboratory Biosafety Guidelines

PHAC has established four classifications or risk groups, for biohazards.

- ***Risk Group 1 (low individual and community risk)***  
Any biological agent that is unlikely to cause disease in healthy workers or animals.
- ***Risk Group 2 (moderate individual risk, low community risk)***  
Any pathogen that can cause human disease but, under normal circumstances, is unlikely to be a serious hazard to laboratory workers, the community, livestock or the environment. Laboratory exposures rarely cause infection leading to serious disease; effective treatment and preventive measures are available, and the risk of spread is limited.
- ***Risk Group 3 (high individual risk, low community risk)***  
Any pathogen that usually causes serious human disease or can result in serious economic consequences but does not ordinarily spread by casual contact from one individual to another, or that causes diseases treatable by antimicrobial or antiparasitic agents. Very few research facilities work with risk group 3 biohazards.
- ***Risk Group 4 (high individual risk, high community risk)***  
Any pathogen that usually produces very serious human disease, often untreatable, and may be readily transmitted from one individual to another, or from animal to human or vice-versa, directly or indirectly, or by casual contact. The handling of risk group 4 biohazards is only allowed in designated government laboratories.

To control these risks, Health Canada has outlined four containment levels. These containment levels outline physical requirements of the lab, such as hand washing facilities and biological safety cabinets. These containment levels also require strict adherence to operational procedures, such as emergency protocols and wearing personal protective equipment.

### What kind of Biosafety Labs do we have at Western?

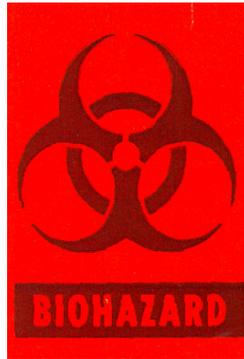
At Western, we have Level 1, Level 2, and Level 3 laboratories.

All of these laboratories are required to adhere to government standards to ensure the safety of Western faculty, staff, students; as well as the community we live in.



## How do I Recognize a Biohazard?

Biohazards are controlled by the Workplace Hazard Materials Information System (WHMIS) as Class D, Division 3, Infectious Biohazardous Materials. They are recognized by this symbol, which is often red.



You may see this symbol on many things, including labels, waste, sharps containers and signs.



Figure 1: Sharps container used to dispose of needles and other sharps.

Figure 2: An example of a sign used to distinguish biosafety labs at Western.

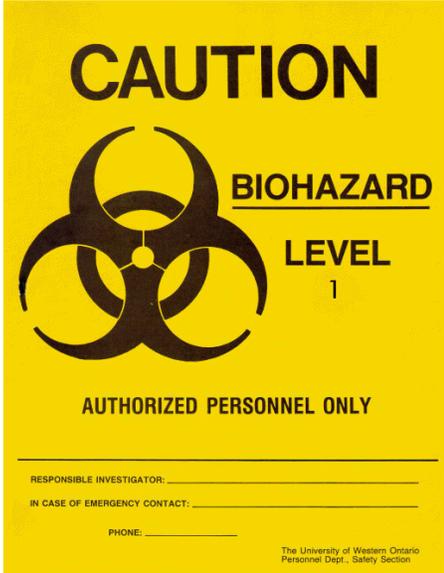


Figure 3: An example of a biological safety cabinet used in biosafety laboratories.



### **Where can I go for more Information?**

Information on biosafety at Western can be obtained from the Health and Safety website: <http://uwo.ca/hr/safety/topics/biosafety/index.html>

This website includes Western documents such as the Biosafety Guidelines and Procedures Manual for Containment Level 1 & 2 Laboratories. It also has links to key biosafety sites, such as PHAC and CFIA.

Faculty, staff and students are also welcome to take our online Biosafety training course. To find out more, visit our website.

### **Who can I ask if I have questions?**

If you have questions, you may ask your Supervisor or the Biosafety Officer at X88730 or [biosafety@uwo.ca](mailto:biosafety@uwo.ca).